IOP NEWSLETTER 37

INTERNATIONAL ORGANISATION OF PALAEOBOTANY

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES
-SECTION FOR PALAEOBOTANY
President: Prof. C.B. BECK, USA
Vice Presidents: Prof. D.L. DILCHER, USA
Dr. J. GALTIER, FRANCE
Prof. Z. ZHOU, CHINA

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DECEMBER 1988

PLEASE MAIL NEWS AND CORRESPONDENCE TO YOUR REGIONAL REPRESENTATIVE OR TO THE SECRETARY FOR THE NEXT NEWSLETTER 38. The views expressed in the newsletter are those of its correspondents and do not necessarily reflect the policy of IOP.

IOP NEWS

MINUTES OF IOP GENERAL ASSEMBLY, MELBOURNE, August 1988

In the absence of the secretary, president Beck co-opted Dr C.R. Hill to act as Secretary and also Prof. A Traverse, "as a good Parliamentarian", to provide guidance on proper debating procedures.
President Beck announced that the next IOP Conference will be in France (see IOP Newsletter 36) and that Prof. T. Kimura will organise a palaeobotanical programme at the next International Botanical Congress in Tokyo, 1993.
Traverse announced that he had received a letter from Prof. F. Schaarschmidt informing him about an international conference on "Anatomical Investigations in Fossil Plants" he is organising at the Senckenberg Museum in Frankfurt am Main to celebrate the centenary of Richard Krausel's birth, as a memorial to his outstanding contributions to Palaeobotany. The meeting will last for 2-3 days and would include field visits to Devonian and Tertiary palaeobotanical localities. Schaarschmidt requests that those interested should let him know as soon as possible, so that

a First Circular may be circulated shortly. The proposed date is within the first half of October 1990.
Douglas noted that the timing for the Frankfurt meeting was conveniently half way between IOP meetings.
The main business, concerning approval of the revised IOP Constitution, was then dealt with. President Beck summarised the background to this: the problems that had arisen with the old constitution in terms of definition of membership and the right to vote, as well as other ambiguities that had caused some considerable heart-searching. This led to the decision during 1987 at the 14th International Botanical Congress in Berlin to revise the Constitution. The Secretary had done this in full consultation with the Executive Committee, resulting in the document distributed with IOP Newsletter 34 in December 1987. (Copies of this document were also circulated at the meeting.) Beck skillfully guided discussion by summarising the major changes designed to correct the previous shortcomings; these are:

1. A clear definition of the responsibilities and powers of regional representatives.

2. Clear definition of "independent regions". These are regions of the globe designated by the Executive Committee as those having problems with currency exchange: at present China, the USSR, and eastern Europe. In these regions the regional representatives have special responsibilites, eg. for Newsletter distribution. Payment and level of dues is a matter to be determined for such regions by their representatives, who are entitled to retain any financial surplus for the use of that region. They may, of course, decide to operate without the payment of any dues.

3. Membership definition and the Right to Vote. The mechanism is that the Secretary will maintain an Electoral Roll in the form of a membership list with up to date information on payments of dues by those members. Voting members are those who have fully paid their dues, or for independent regions, those validated by their regional representatives as being active members.

A proposal to add a new clause was put by Beck:
4.1.1. A President cannot be re-elected to a second term; a Vice-President or Member at Large cannot serve more than two consecutive terms.

T.N. Taylor moved that 4.1.1. should be adopted as proposed, and this was seconded by Douglas. After some questions from the membership to clarify, the motion was carried on a show of hands.

[Discussion of other items followed. For instance, it was also proposed that item 4.8 should be deleted and the relevant remaining content worked in with 4.2.2. as amended. 4.2.2 would therefore read:
The Executive Committee is empowered to fill any Office that becomes vacant during the term. If the Office of President becomes vacant, one of the Vice-Presidents shall be elected by the Executive Committee to succeed to the office for the remainder of the term.
It was also proposed that the second half of 4.6 should be deleted, to avoid redundancy: The three Members at Large must be from different countries.]
Manum reflected the feelings of many in commenting that such

discussion on minutiae is tedious, boring and time-consuming, as well as difficult for non-English speakers. Accordingly, he moved that the whole draft document, incorporating the additional clause 4.1.1. should be accepted. With characteristically incisive pragmatism, Banks seconded and the motion was carried on a show of hands.

President Beck concluded by briefly indicating how this had led to an historic improvement to the Constitution. All were satisfied.

Having dealt with the main business, a general discussion ensued on the potential role of IOP in promoting palaeobotany in the 1990s, reflecting the widespread concern among palaeobotanists for the future survival of our subject. Douglas reminded the meeting that in Australia it is impossible to get a job as a palaeobotanist: the successful ploy is to get a job called something else and then to do palaeobotany; we should perhaps emphasise more the useful work that we can or do actually do, such as sedimentology and oilfield stratigraphy, then what we would like to call ourselves. Dilcher stated that, in general, services are provided for people who perceive a need for them and answers are researched to questions posed; we must accept niches therefore as they arise in the changing scene of science. Dianne Edwards pointed out that letters written by UK palaeobotanists expressing concern over cutbacks had impressed the committee reviewing the Earth Sciences in British Universities; this shows that action by individuals can have a positive effect. Such is especially important since palaeobotanists are subject to scrutiny by both Earth Sciences and Biological review committees. She requested IOP to draft a letter of support to the British University Grants Committee on this topic, in view of their imminent review of Biological Science Departments. Schweitzer remarked that in Federal Germany, palaeobotany is included within the Earth Sciences and that it is increasingly difficult to obtain funds from Biological Science sources. Wagner and Manum spoke in general support of these views, and President Beck added that he would be pleased to provide supporting letters, especially if their draft content and an account of the context and reasons for requiring a letter are provided for him.

Beck also brought attention to the role of popular articles in promoting palaeobotany, and noted Mary White's book on the greening of Gondwana as a shining example of what can be done in this direction. Charles Miller spoke for the importance of representing the subject outside the immediate field, to emphasise what we do for other scientists. When we organise meetings we could include a symposium directed at people outside our field for instance. Schweitzer also suggested that IOP members could arrange small interdisciplinary meetings in various countries eg. on palaeoclimates, palaeoecology, and palaeobiogeography. In response to a point raised by Manum, Banks pointed out that providing a service for others also raised the opportunity for increasing revenue to support palaeobotany. On the general theme of showing other scientists that we are relevant, Krassilov said that we need to raise our prestige amongst geologists by addressing topical issues such as asteroid

impacts, sometimes critically as well as in support, and that we need to be more confident that our work is at least as relevant as that of the geophysicists, for example. While interdisciplinary work is important, it is also vital that basic taxonomic work is maintained, lest we lose a base from which to relate outwards. Hill pointed out the need for friends in high places and for informative leaflets aimed at potential users of palaeobotany.
Based on a motion from Jack Douglas, it was resolved that the Executive Committee should prepare a statement on the use of palaeobotany to science, for circulation as a draft to the membership and to form an eventual published leaflet or brochure for wider circulation.
Finally, Manum proposed a vote of thanks to erstwhile Secretary Boulter for his good work on the draft constitution and also in the smooth day to day running of IOP. This was warmly supported by the membership.
C.R. HILL, London

NEW REGIONAL REPRESENTATIVES
The new South America representative is Dr Analia Artabe, Division Paleobotanica, Museo de Ciencias Naturales, (1900). La Plata, Argentina. She completed her thesis on Triassic compressions unde the guidance of the late B. Petriella in 1984. She has published about 15 papers and has been on the Board of the Asociacion Paleontologica Argentina.
While Dr B. Meyer-Berthaud is in the USA the southern Europe representative will be IOP Vice President J. Galtier.

FACSIMILE NUMBERS
With the introduction of fax communication systems (written messages scanned and transmitted along telephone cables to give usually poorly printed facsimiles) it will be easier for IOP members to send material for consideration to be included in the IOP newsletter.
The aim is for a directory of palaeobotanists fax numbers to be included in the IOP membership list. Please send your fax number to your regional representative.
To start, two numbers are:
IOP President, Beck: USA - 313 747 0884
IOP Secretary, Boulter: UK - 01 519 3740

REPORTS OF RECENT MEETING

THIRD IOP CONFERENCE, Melbourne, August 1988.
Several reports on the meeting have been received and a selection of edited comments appears below. Copies of the abstracts and programme can be obtained from J. Douglas or the IOP Secretary.
Of the 145 registrants 20 were accompanying members, and 28 were students. 45 people went on the Tasmania excursion and 35 on the Victoria one. 100 papers were presented and there were 12 posters.
Despite some hiccups, mainly because we had difficulty in getting

sufficient after-hours workers, there were no serious disasters. A couple of wet days worried both excursions.
We intend to produce a Proceedings volume, perhaps with some sponsorship, if our final financial position allows.
J. DOUGLAS, Melbourne.

The pre-conference field trip in Tasmania, from Launceston to Hobart, was led by Bob Hill and Roy Carpenter, both of the Botany Department in the University of Tasmania. The five day trip offered interesting glimpses of Tasmania's scenery, both natural, man-made and man-destroyed. The Queenstown copper mine was a large and frightening example of the latter. Botanically, the emphasis was more on the present vegetation than on the fossil localities. 16 of the 40 participants were Japanese students led by the ever-smiling Professor Kimura.
The conference itself was a friendly and non-commercial organisation; a strong contrast to the subsequent International Palynological Conference. Harland Banks' talk at the dinner on "Banks on Banks" was, as usual for this speaker, well prepared and well received. Mary White presented her recently published book "The Greening of Gondwana: the 400 million year story of Australia's plants" at the conference. It is an extremely fine example of scientific as well as popular presentation of a fascinating botanical and geological story, superbly illustrated. Hopefully, it will be marketed in the northern hemisphere very shortly.
The conference bore evidence to the fact that palaeobotanists still make a relatively small and homogeneous community and fully enjoy each other's company. Both the conference dinner and the less formal "Bush Dance" were enjoyable events, not least thanks to Jack Douglas' lively and energetic hosting. The success of these events and the whole conference owe very much to him, Mrs Douglas and the other organisers.
S.B. MANUM, Oslo.

The formal opening ceremony was attended only by scientists, no politicians or science administrators. The entire affair was over in 15 minutes. R. Delgarno gave a brief historical background of geology and palaeobotany in Australia and formally declared the conference open.
This opening ceremony was followed by a Keynote Symposium whose theme was "The origins of the Austral Flora". The Keynote Address on "Australian journeys of Ferdinand Mueller, pioneer botanist" was presented by Dr J.H. Willis. He was given one hour and showed nearly 60 slides from which we got a glimpse of the present Australian vegetation. This symposium had six more papers of which two had no relevance whatsoever to the symposium title. They were the ones presented by V.A. Krassilov on "Fossil links reconsidered" and by H.K. Maheshwari on "The glosopterid fructifications: an overview". The other four papers were on Australian fossil plants but they did not have a connected theme. J.G. Douglas gave an historical account of Palaeobotany in Australia. In his concluding remarks he mentioned that if one calls oneself a palaeobotanist in Australia it will be difficult to get a job.

The rest of the conference was organised as two concurrent sessions of papers whose major themes were:
Thallophytes and earliest land life
Origin and early evolution of land plants
Carboniferous and Late Devonian floras
Gondwana floras
The Mesozoic - a time of change
Early radiation of angiosperms
Tertiary plant evolution.
I was generally impressed with the level of content and presentation, but for me, five papers stood out as being particularly well done.
H.P. Banks spoke about Leaves of Devonian Lycopods and recognised three categories. In the first is Drepanophycus spinaeformis and Asteroxylon (both perhaps pre-lycopods), Baragwanathia and Drepanophycus gaspianus. In the second Archaeosigillaria, Artschaliphyton, Haskinsia, Lycopodites and Barsostrobus, and in the third Protolepidodendron and Colpodexylon.
C.R. Hill described a new species of Androstrobus preserved in three dimensions in sideritic ironstone. The new species is remarkably similar to male cones of extant cycads. Its sporoderm structure of pollen or microspores also closely resembles that of cycadalean pollen.
T. Delevoryas gave an account of some fertile specimens of Pseudofrenelopsis from the lower Cretaceous of Arkansas. Pollen cones attached to the leaf-bearing axes of Pseudofrenelopsis were found to be similar to those previously assigned to Classostrobus.
E.M. Friis et al's paper was based on some uniquely preserved specimens of Onychiopsis. For the first time they gave detailed information on sporangia and fertile relationships with the extinct dicksoniaceous fern Coniopteris.
Vardekloeftia, earlier described from the Upper Triassic of east Greenland, has now been shown to be an early member of the Bennettitales by Pederson et al. Their investigation supports the view that the interseminal scales of the Bennettitales are homologous with the seeds.
I am very grateful to the organisers of the meeting, particularly J. Douglas, for enabling such an informal and constructive insight into current advances in our subject.
M. BOSE, Oslo.

FORTHCOMING MEETING

UPPER PALAEOZOIC PALAEOBOTANY, Cordoba, Spain, September 1989
This is being planned to take place in the Jardin Botanico de Cordoba during mid-September following the European Palaeobotanical meeting organised by C. Alvarez Ramis (University of Madrid).
The organising committee comprises R.H. Wagner (Cordoba), C. Alvarez Vazquez (Cordoba, Oviedo), M.C. Dieguez (Mus. Nac. Ciencias Nat. Madrid) and M.J. Lemos de Sousa (Univ. Porto).
Accomodation will be at the University Hall of Residence within walking distance of the Botanical Garden. Price (subject to

change until second and final circular): 3,500 pts for individual use of double bedroom with private bathroom (continental breakfast included; 4,500 pts with full board and washing included); 2,500 pts per person for shared use of bedroom as above (continental breakfast included; 3,500 pts with full board and washing included). Information about hotels in Cordoba will be given in the second (final) circular.

Day 1 - Travel from Madrid to Cordoba which will include a visit to the Emma Opencast in Puertollano where Sporangiostrobus and other material can be collected from a tuff band of Stephanian B/C age.

Day 2 - Jardin Botanico de Cordoba: General lecture on the Distribution of Carboniferous and Permian Floras in the Iberian Peninsula. Presentation of Papers on Upper Palaeozoic Floras in different parts of the Iberian Peninsula. Poster Session.

Day 3 -- Presentation of papers on Upper Palaeozoic Floras in different parts of Europe (and North America?). Poster Session.

Day 4 - Symposium on Floral Distribution in the Upper Palaeozoic (in the morning); visit to the historical centre of Cordoba (in the afternoon). Official Dinner in the evening.

Day 5 - Field Trip to Sierra Morena: Penarroya Coalfield (Westphalian B) and Valdeinfierno (Tournaisian). Dinner and Accommodation in Llerena.

Day 6 - Field Trip to Sierra Morena: Guadalcanal (Permian) and Berlanga (Visean). Dinner and Accommodation in Cordoba.

The meeting aims to acquaint palaeobotanists with the fossil floras recorded from the Carboniferous and Permian of the Iberian Peninsula. Apart from a general lecture setting the scene, posters will be prepared and material displayed of floras ranging in age from Tournaisian to early Permian (including fossil remains studied in Cordoba, Porto, Oviedo, Madrid, Lille and Paris). Palaeogeographical considerations will be emphasised in relation to the general topic of Floral Provinces and Palaeoecology.

The research building of the Botanical Garden offers facilities for lectures, displays and poster sessions. Its setting in the Botanical Garden provides for congenial surroundings and is of interest to Botanists wishing to see endemic species of the West Mediterranean area and the Canary Islands.

Cordoba is a historical city founded by the Romans on the banks of the Guadalquivir River. For a long time the capital city of Moorish Spain (the Western Caliphate), its scientific and cultural traditions made it the funnel for Greco-Roman and Arab knowledge to reach Western Europe in the Dark Ages. The ancient Mosque (Mezquita) is one of the outstanding historical monuments in Spain and Europe in general. Roman mosaics may be seen in the Christian palace-fortress, Alcazar de los Reyes Cristianos. Other important buildings are the Palacio de Viana with its many patios and, outside the city, the partially restored ruins of Medinat Azahara, the summer residence of the Caliphs.

People wishing to attend the Upper Palaeozoic Palaeobotanical Meeting in Cordoba are requested to fill in the provisional Registration Form which is to be sent to C. Alvarez Vazquez, Jardin Botanico de Cordoba, Apartado 3.048, 14071 Cordoba, Spain. The final circular will be sent out early in 1989.

Fees will include travel from Madrid to Cordoba with lunch at Puertollano, Abstracts of Papers, and the Official Dinner with Entertainment. This may come to 19.000 pts (c.US$ 150).

INTERNATIONAL WORKING GROUP ON MEGASPORES

People interested in forming an informal working group dealing with megaspores of all ages (and including some of the following topics: stratigraphic range, morphogenera, classification, ultrastructure, chemistry of the wall and nomenclature) should contact: Dr. Marta A. Morbelli, Catedra de Palinologia, Facultad de Ciencias Naturales y Museo, Paseo del Bosque s/nro., 1900 La Plata, Argentina.

A NEW APPROACH TO VALIDITY OF NAMES OF FOSSIL PLANTS

As faithfully recorded by Traverse (IOP Newsletter 34, Dec 1987) the Nomenclature Section of the 14th International Botanical Congress appointed two committees (strictly, two subcommittees of a single body) concerned with the stability of plant names. These were to investigate two possible strategies for regularising the publication of new plant names (both fossil and non-fossil). Some of the cumbersomeness - and absurdities - of the present system are pointed out in Traverse's article. The formal status of these two sub-committees is given in Taxon 37(2), May 1988, p.443. They form collectively the IAPT Special Committee on Registration (Chairman, Knut Faegri) with a subcommittee on the Registration of names (Secretary, G.R. Gunn, USA) and a subcommittee on the Registration of publications (Secretary, R. Hnatiuk, Australia).

The "Registration of Names" concept would involve bypassing exactly what constitutes "effective publication" by requiring that for any new name to be validly published, it would have to appear in a list to be published in a single agreed source, probably annually, citing the reference to the full details and their place of publication. Many aspects of this procedure would need clearing up, such as whether publication of a name dated from its original source journal, or from its appearance in the official register. Financial implications of having such a formally recognised Register published reliably at acceptably brief intervals would be a further problem to be faced.

The alternative strategy (and that to be investigated by the second of Faegri's sub-committee's) would be to draw up a list ("register") of "approved" publications. Only new names carried in an "approved" publication would be deemed valid. This procedure would be in many ways simpler to effect than the "registration of names" strategy, but there are still plenty of problems here too. For example, who would be responsible for seeing that the journal (or perhaps a one-off book) carrying the new name of a fossil plant would get onto the "approved" list (the register of publications)? Would it be the editor of the journal (who might not be very interested) or would it fall to the author of the new name (who would certainly have an interest

in its gaining validity)? This committee will also have to concern itself with the prospect that in future new names may not always appear on paper. This of course focusses on the somewhat contentious matter of what constitutes "publication". With the prospect cf non-paper based electronic data dissemination superceding orthodox printed publication in the relatively near future, the clarification of how "effective publication" should be defined is becoming increasingly urgent. The concept of a recognised register of all acceptable "vehicles of publication" is one possible way of dealing with this.

Two important features of these proposed reforms should be borne in mind. One is that whatever is proposed will have to be fully discussed, and if found acceptable, formally ratified by the International Botanical Congress, scheduled for Tokyo, 1993. The other is that there will be plenty of time to weigh up the pros and cons in the interim.

A related but separate matter from name registration is the whole instability of plant names generated by the principle of priority (a little ironically, since priority as a concept is meant to promote stability!). Names which have long been accepted and are widely used can be ousted by invoking the claim of a long-lost but validly published earlier synonymous name. Such unhelpful name-changes probably afflict the nomenclature of extant (living) plants more than is the case in palaeobotany. None the less, we are faced with this problem too. One attractive solution lies in the drawing up of a list of "names in current use", which, once ratified, would be protected against their being ousted on purely nomenclature grounds, by the discovery of earlier synonyms or homonyms. A number of botanists have come to feel that the production of a "register of names" should be actively explored. Accordingly, following the Berlin Congress, a meeting of interested systematists, and particularly representatives of institutions involved in indexing plant names, was held at the C.A.B. International Mycological Institute, Kew, on 22-23 April, 1988. The location of that meeting was significant, in that the mycologists have been at the forefront of nomenclatural reform, in trying to tidy up the status of many of the contentious names that have cluttered the literature of mycology. (It might be added that some of the problems of parataxa which cause complications in mycological nomenclature have close parallels to those in palaeobotany). I attended this meeting as a member of the General Committee of the IAPT, and as chairman of the Committee for Fossil Plants.

The programme agreed to at the Kew Meeting was to prepare a draft list of plant "names in current use". In the first instance this will comprise only generic names, but with the ultimate intention of producing a definitive list of species names, for all plant groups, living and fossil. It is estimated that between 30,000 and 40,000 generic names for all groups covered by ICBN (including macrofossils, spores and fossil phytoplankton) are "in current use". Our aim would be to have a draft list of generic names (including fossils) ready in time for the Tokyo meeting in 1993. If this proves acceptable to botanists, this list might then be given formal, protected status (somewhat akin to that of the present listing of nomina generica conservanda) by the

Congress, with appropriate arrangments for its formal revision by additions and deletions. The prime source for this list will be the Index Nominum Genericorum (published in three volumes, with a supplement, in the Regnum Vegetabile series) - usually abbreviated as ING. This work, rather little used by palaeobotanists outside the Tertiary field, has impressive cover of fossil taxa, and actually includes plant microfossil taxa (spores, pollen, phytoplankton) more completely than the USGS "Generic Index" series (published under the successive editorships of H.N. Andrews, A.M. Blazer and A.D. Watt - the last appearing in 1982).

It is hoped that palaeobotanists will participate actively in the compilation of this list of "names in current use". The "Fossil Plant Committee" of the IAPT has yet to formally consider its role in this, but I hope that they will be prepared to act as a clearing house or pathway for sectional lists that will need to go out to specialists in different areas of the subject. I would visualise our needing to send out sectional lists of generic names (sub-sets of the ING list) to perhaps 100 or so participating paleobotanists and palynologists, for their assessment of the current status of the names. The generation of these subsets on systematic or age criteria is perfectly feasible as the ING now exists in the form of an accessible database in the Smithsonian Institution in Washington.

A very good summary of the background to this project is given by David Hawksworth, "Improved stability for biological nomenclature" in Nature 334, 28 July 1988, p.301. If anyone is interested in assisting they should write to me (Biology Department, Royal Holloway and Bedford New College, Egham, Surrey TW20 0EX) or to Dr. A. Traverse (Department of Geosciences, Penn State University Park, PA 16802, USA) qucting the taxonomic group and age bracket which they would be prepared to review (e.g. Mesozoic cycadophytes; Tertiary dinoflagellates; Palaeozoic lycopods, etc.).

Finally, it is perhaps worth emphasising that the whole of this exercise relates to nomenclature. There is no way in which this will supercede the assessment of such taxonomic matters as to whether one species should be assigned to this genus or that, or whether two genera are or are not synonymous. These matters will remain the prerogative of individual palaeobotanists, judged in their own subjective way.

The matters at stake here represent a considerable upheaval in our handling of fossil plant nomenclature. The views of palaeobotanists on the possible developments outlined above will be of the greatest interest to those concerned in trying to bring about these changes. Lets hear them!

W.G. CHALONER, Egham, Surrey, UK.

MEYEN'S CATALOGUE OF FOSSIL PLANTS

Meyen's catalogue is close to the hearts of many of the Institute staff. Drs M.A. Achmetiev, M.V. Durante, A.V. Gomankov, A.B. Herman and Mrs M. Meyen as secretary, are particularly active in getting it ready for publication, within twelve months. The

five named above are busy filling many of the gaps in the written notes and cards (6 drawers of the kind they have in libraries). Some of the details are missing from the written records. To that end, there is a long list of genera, which need attention and the Moscow palaeobotanists are asking for help in giving morphological and systematic appraisals.
The complete catalogue includes genera of plant fossils (excluding spores, pollen and phytoplankton) from the indices of Andrews, Watt and Blazer as well as about 500 additional genera. The list of genera alone occupies 105 pages. It has six sections:
1. An alphabetical list of all the genera with annotation for each giving A (Andrews' index), W (Watt's) or B (Blazer's), author, date, type species, age and geographical location. There is also a key linking to sections 2 and 3.
2. The Formal Systematic System, after Meyen's book (i.e. the kind of plant organ concerned and its type of preservation)
3. The Natural Systematic System, after Meyen's book
4. Homonyms
5. Meyen's genera from Andrews etc. which he removed from the higher plants.
6. References.
The Moscow five write:
"After Dr Meyer's death we, his colleagues, are trying to prepare for publication his higher plants genera catalogue, the construction of which has been described in Meyen's "Fundamentals of Palaeobotany" and in IOP Newsletter 30.
"Now we are adding to the catalogue new genera names taken from numerous reprints and letters sent to Meyen after his request in IOP Newsletter 30 about the need for information on new genera. We are pleased for this possibility to express our gratitude to all of Meyen's correspondents.
"We ask colleagues all over the world to help us in the determination of the genera listed below and their morphological and systematic position. Dr Meyen didn't put them in either his formal or natural systems. Most of these genera are in Andrews', Blazer's and Watt's catalogues but that information seemed to be insufficient to Meyen. And some of the genera are new.
"We will be grateful for any information concerning the position of these genera in either of Meyen's formal or natural groups."
M.A. ACHMETIEV, M.V. DURANTE, A.V. GOMANKOV, A.B. HERMAN
Palaeofloristics Laboratory, Geological Institute, USSR Academy of Sciences, Pyzerevky per. 7, Moscow 109017, USSR.

To summarise, please send Dr Akhmetiev:
1. your understanding of the systematic position of any of the genera listed below,
2. your understanding of the organ, type of preservation and age of the specimens upon which any of these genera are based.

Acanthodesmia A, Aciphylla A, Acoxylon A, Adiantoneura, Agavites Visiani A, Alasites A, Alloioxylon, Allophyton W , Alsophilina A, Amarjolia Bose et al. 1984, Amaryllites A, Amphiephedra A, Amphoridium A, Anabacaulus A, Andrychia Zdebska, Androphyllum A, Anthocephale A, Anthophycus A, Aphlebiopteris A, Aphyllopteris A, Aplophlebis A, Arctopteris W, Aspasia A, Aspleniophyllum A.

Bacca A, Baieridium A, Bolbopodium A, Bzasiliocladus Yoshida, Bucinella A.
Calleophyllum A, Calycithes A, Campanulospermum A, Camptophyllum A, Capsulites A, Caricopsis A, Carpodium A, Caulomorpha A, Celyphinia A, Ceratoniophyllum A, Ceratostrobus A, Ceratozamites A, Chloephycus A, Chordophyllites A, Colymboxylon A, Comephyllum A, Conchocaryon A, Conchotheca A, Coniopteridium W, Copiapaea A, Corticites A, Crinites A, Cryptophyllites A, Culcitites W, Cyathoides A, Cycadeomyelon A, Cycadorachis A, Cylindropodium A, Cymodoceites A, Cyperocaulon A.
Dacrydites A, Dahurites A, Dascycladites A, Dasyphyllum A, Deltenrea A, Dicksoniopsis A, Dicranopteris A, Dicrophlebis A, Dicropteris A, Dictyodendron Landsborough A, Dictyoporus A, Digonospermum A, Doliostrobus A, Dorfiella W, Doryanthites A, Dyctuocaulus A.
Eisothecaryon A, Elasmophycos A, Ellesmeria W, Endoa A, Enygmatostrobus A.
Feronia A, Fetura W, Filiciphyllum A, Frenelites A.
Garwoodella A, Geleenites A, Geocarpus A, Gleditschiacanthus A, Glossochlamys A, Gonzalezoxylon Nishida, 1984, Gopadia W, Gothaniella A, Guariea, Guptiocarpus Sharma 1971, Gymnocaulus A, Gyrocalamus A, Gyrochorte A.
Haidingera Eichwald 1854, Halleia A, Hedychiophyllum A, Helminthoida A, Hiraeocarpum A, Hirmeria A, Hisingera A, Hissaropteris A.
Illicites A, Indotheca A, Ingophyllum A, Irvingiaceoxylon Gros 1983, Irvingioxylon.
Jacutopteris A.
Katadromopteris A, Kettneria A, Kolymella B, Kovalia B, Kraeuselia A, Kugartenia W.
Lacuniderma B, Laffonia A, Laminopsis A, Laricites A, Lelestrobus Sh. C. Srivastava, Lepidocaryopsis A, Lepidotruncus A, Leptochilites A, Leptophycus A, Lescuria A, Liaspermum A, Lithophyllodendron A, Liversidgea A, Lomarites A, Loxsomopteris W.
Macrocystites A, Marattites A, Margitheca Shchegolev 1974, Mastocarpites A, Mauritsia Jongmans, Megalozamia A, Membranites A, Meniphyllum A, Mesoneuraster A, Microzamia W, Mildraediodendron A, Mohriopsis W, Monocerocarpus A, Monodorospermum A, Moreauia A, Moriconia A, Morindidium A, Morrisia A, Mycocarpon A.
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PALAEOBOTANY IN MOSCOW

The IOP Secretary was privileged to visit the Palaeobotany Laboratory of the Geological Institute, Academy of Sciences, on a scientific exchange programme from November 14-20th. The objectives of the visit were to increase scientific communication between the laboratory and other palaeobotanists particularly with the aid of IOP, to share ideas of the development of Arctic Tertiary floras, and to observe recent developments in the openness and restructuring of the palaeobotanical sciences in the USSR.
The following notes give a brief and hurried view of some of these experiences.
The academic staff at the Institute, ordered approximately by decreasing age (78 to 24 years), are:
Prof YELENA ZAKLINSKAYA, Tertiary pollen and spores
Dr NINA VOLKOVA, Palaeozoic phytoplankton
Dr EUGENE LEBEDEV, Upper Jurassic and Cretaceous macrofloras
Dr OLGA YAROSHENKO, Upper Permian and Triassic miospores
Dr IDA KOTOVA, Cretaceous pollen and spores
Dr MAYA DOLUDENKO, Jurassic macrofloras, pollen and spores
Dr MARINA DURANTE, Upper Palaeozoic macrofloras
Dr IRNA DOBRUSKINA, Triassic macrofloras
Dr MIKHAIL AKHMETIEV, Head of laboratory, Tertiary macrofloras
Dr GRETA BRATZEVA, Tertiary pollen and spores

NINA ZAPOROJETZ, Palaeogene dinocysts, pollen and spores
Dr ALEXANDER GOMANKOV, Upper Palaeozoic miospores and macroflora
EUGENE ZYRJANOV, Neogene and Quaternary pollen and spores
Dr ALEX HERMAN, Cretaceous macrofloras
IGOR IGNATIEV Upper Palaeozoic fructifications
KATRIN IOSIFOVA, Cretaceous dinocysts
There are also seven technical assistants:
NINA ZVEZDINA, macerations; MARGARET MEYEN, secretary; VLADOMIR RASTORGUJEV, curator; CLARA PUTCHNIKOVA, secretary and chef; OLGA JUDASCHEVA, curator; VALERY PUCHANTO, macerations; ELENA KOSTINA, curator and student of Jurassic palaeobotany.
There are two other active palaeobotanists working in Moscow, ALLA JURINA, who teaches at the Geology Faculty of Moscow University, Leninsky Gory, Moscow 117234, and N. MAKULBEKOV of the Palaeontolog Institute of the Academy of Sciences, Profsoyuznaya d.123, 117868 Moscow GSP-7. He has just completed a major analysis of the Palaeogene floras of western Kazakhstan and the lower reches of the Volga river.
This large group of active researchers work in close hormony with one another and resemble a friendly and inspiring family. Indeed, this may become a useful attribute now that there may be an opportunity to develop the institutions of Soviet science. For by working together as a comradely team there may be new ways of restructuring palaeobotany on a co-operative basis.
For instance, there is a group collaborating on Cathaysian and Angaran floras of the Palaeozoic, another working on pollen, spores, dinoflagellate cysts and megafossils of the Tertiary of Asia, and another concerned with Mesozoic fossil plants. Each group is anxious to co-operate with other IOP members and would welcome correspondence, questions, reprint exchange and other contacts. As in the rest of Europe and elsewhere there are pressures to encourage palaeobotanists to apply their previously theoretical work to the practical problems of industry and business.

A PALAEOGARDEN IN BELFAST

About 10 years ago Prof A.D. Wright began preparing a garden on some land surrounding the building of the Geology Department at Queen's University. It was decided to use present-day representatives of important ancient plant groups and to include annotated displays of some large plant fossils from the department's collections.
The result is an aesthetically rewarding display of 22 plant species, which attracts attention and can be used for both teaching and relaxation. An illustrated guide to the Palaeogarden is available for UKL 1.00 from Prof A.D. Wright, Department of Geology, Queen's University, Belfast BT7 1NN

PALAEOBOTANISTS' BIRTHDAYS

[When there is some kind of academic celebration, this is proposed as a regular item for IOP newsletters. Please send retrospective contributions, explaining the background to the celebrations, to the IOP Secretary.]

O.A. HØEG, November 25th 1988
There was an elaborate birthday party at the University of Oslo on November 25th which was attended by Hoeg and more than 60 guests: family, past and present colleagues, friends and palaeobotanists. These included his three most senior post-graduate students, Jorunn Vigran (Devonian spores), Nils Brandt (dendrochronology) and Svein Manum (palaeobotany and palynology). Hoeg was presented with the latest issue of the Journal of the Norwegian Botanical Society "Blyttia", which contains articles on ethnobotany and palaeobotany all dedicated to him, together with his bibliography of about 250 articles. There was also the presentation of more than 30 reprints from palaeobotanists who have recently dedicated their articles to celebrate his birthday. Most innovative was the gift of a two hour video tape containing an interview of Hoeg by Manum. This is the first of a new initiative by the Norwegian Academy of Science and Letters in which prominant scientists will have an interview filmed for the archives.
Of the fifteen speeches of congratulation three were given by palaeobotanists: Manum spoke of Hoeg's palaeobotanical work, Bose of his years as the first Director of the Birbal Sahni Institute of Palaeobotany, and Boulter offered the best wishes of members of IOP.

W.G. CHALONER, November 22nd 1988
On November 30th M.E. Collinson organised an informal celebration of the ex-IOP President's sixtieth birthday. He was presented with a card containing collages of photographs of his post-graduate students' work and had to remember whose was which. With just a little prompting for the more devious ones he got them all right.
Despite continuing and aggressive attempts by Mrs M. Thatcher rumours of his imminent retirement are unfounded. However, just in case, he has accepted earlier this year, appointment as (visiting) Wilmer D. Barrett Professor of Botany at the University of Massachusetts.

NEWS OF INDIVIDUALS

N.R. YAWALE, Dept. of Botany, Institute of Science, Nagpur, India, is working on the intertrappean fossils of Deccan Trap Horizon of central India. Recently along with his research students he discovered six localities in the Yavatal District of Makarastra state. The first four localities seems to be the parts of a big fossil lake, as there are very big cherts flooded with Gastropods and Algae, formed during the Cretaceo-Eocene times.

B. MEYER-BERTHAUD is spending a year and a half in the Taylor laboratory at Columbus, Ohio, USA from December 1988.

OBSERVATIONS

[It has been suggested that we should try to include in the IOP newsletter a section of short anecdotal observations and comments on news and views, similar to those journalists' quips found in many newspapers. Here is a brave first attempt to set the style. Please send your contributions "on the back of a postcard" to the editor.]

SOUTH KENSINGTON UNDERGROUND STATION, in London, is being decorated. The station is close to the British Museum Natural History whose building features quite well-reproduced *Lepidodendron* leaf scars on its pillars. The underground station murals have tried to imitate this same pattern but lack the attention to detail. Who advised the artist?

PALAEOBOTANISTS' WORKERS ASSOCIATIONS are springing up in various parts of the world. Is this some reaction to the demise of traditional western trades unionism? It is not the function of IOP to interfere in the internal affairs of any country.

The CONFERENCE PHOTOGRAPH of participants at the International Palynological Congress in Brisbane was taken with a fish bowl lens. Those at the edge are shown with distorted faces. Is this intentionally reflecting their palynological opinions?

The MUSEUM OF THE PALAEONTOLOGICAL INSTITUTE of the USSR Academy of Sciences was opened in 1983. It must be one of the largest and impressive palaeontological museums in the world and even houses a permanent 20m display of plant evolution. Which museum can beat that?

THREE UNIVERSITY APPOINTMENTS FOR PALYNOLOGISTS, one of which also searched for a palaeobotanist, were advertised in two successive issues of *Nature* magazine during early September.

MOST SOVIET PALYNOLOGISTS ARE WOMEN because members of that sex are more careful and fastidious at the microscope. That is one theory that has been proposed recently. Can other countries show similar trends? Can any men falsify that statement?

PALAEONTOLOGY NEWSLETTER is the new name for the newsletter of the Palaeontological Association newsletter (ISSN 0954-9900). It replaces the larger formatted *Pal. Ass. Circular*.

The UNIVERSITY OF MASSACHUSETTS AT AMHERST Special University Convocation was held on October 12th 1988. L. Margulis spoke on "The first three billion years - the five kingdoms of life", W.G. Chaloner on "The latest 500 million years - evolution of the plant kingdom" and P.H. Raven on "The next twenty years - global desctruction of biological diversity: can it be stopped?"

BOOK REVIEW

CLADISTIC BIOGEOGRAPHY. C.J. Humphries and L.R. Parenti. Clarendon Press, Oxford, 1986, xii + 98 pp. UKL 19.80 hardback. ISBN 0-19-854576-2.

Historical biography is the study of the unique historical and geographical events that have given rise to regional biota, sometimes by use of fossils but mainly by backward reconstruction from modern distribution patterns. It has been a rapidly changing discipline in the last decade. For much of the last century the emphasis has been on reconstructing dispersal pathways of particular groups of plants or animals from centres of origin, generally using fossils. As the fossil record is frequently inadequate, the results have generally been ridiculously literalistic "join up the dots" biogeographical histories with the fossils (or the appropriate facies?) forming the basis for the "dots" in space, time and phylogenetic position. Eventually there has been a reaction to this, in the form of cladistic biogeography. Cladistic biogeography is a development of the vicariance biogeography of Leon Croizat and is based on the premise that whole ecosystems sometimes extend their ranges, and are subsequently divided by major geographical events so that the organisms in the isolated ecosystems diverge phylogenetically. The sequence and position of these isolating barriers can be reconstructed from the cladistic relationships within groups of living organisms occupying the resulting areas. For any one group of organisms there may be the "noise" of some unique dispersal events altering the pattern, but if a "basket" of groups from an area is taken, the cladistic patterns of relationship should have geographically congruent components which represent reconstructed biogeographical history. So the general principle is that, although the geographical history of biota is a product of many phenomena, sequences of isolation events represent a pattern which can be analysed out from among the noise of ecological effects, climatic effects and unique dispersals of individual species.

This book is essentially a partisan textbook summarising the history and methodology of cladistic biogeography and is effectively a spin-off from several symposia held in the late 70's and early 80's. It is divided into four main sections. The first is a general introduction to the history of ideas associated with historical biogeography up the late 1960's. The second section is a review of the methodologies and theories of cladistic biogeography developed during the 1970's and 80's, and provides a valuable summary of a decade of evolving ideas. The third section looks at how the methodologies operate in worked examples from the literature and discusses the problems encountered in developing biogeographical hypotheses from the imperfect data that the real world provides. It is effectively a "how to" manual for the budding cladistic biogeographer. This chapter ends with 26 principles or axioms, which made interesting discussion points as they range from simple logic to articles of faith. The role of fossils in biogeography is restricted to demonstrating the latest time of appearance of groups and the presence of past range extensions. The final section is modestly

entitled "A new view of the world" and discusses various biogeographical patterns that the authors have difficulty in relating to the orthodox plate tectonic history of the continents. They clearly feel that the past unorthodoxy of continental drift justifies equal treatment for all orthodox and unorthodox views ("Pacifica", "Expanding Earth"). This studied agnosticism (are they really incapable of evaluating geologists' arguments?) contrasts with their determination not to present the reader with alternative non-vicariant explanations for the patterns they discuss. The discussion of modern amphitropical (north and south temperate but not tropical) groups is the extreme case. It leads to the hypothesis ("just one of many" but presumably preferred) that amphitropical distribution patterns can be explained as the products of one pre-Pangaeal temperate province that split, with one part moving to the opposite side of the tropical zone, to give a three-zoned Pangaea. This is fine for groups such as lampreys (although they were present in tropical Pangaea) but is also implicitly invoked for the angiosperm Euphrasia and the teleost fish family Percichthyidae which must presumably have been present in the pre-Pangaean world. Theorised Palaeozoic angiosperms and teleosts will present most biologists and palaeontologists with an insuperable credibility problem and I feel that if this is where the authors axioms lead them, they are not the people to do a successful "hearts and minds" job on the next generation of biogeographers.
The book is illustrated with a few token pictures of organisms, assorted maps which are helpful and a large number of area cladograms which are usually clear. However Figure 4.14 comprises three area cladograms with a large number of small geographical units depicted only as abbreviations which have to be checked against the caption and is distinctly user-unfriendly.
The book is essentially an introduction to the modern discipline of cladistic-vicariance biogeography for those who have not encountered it. It is largely an activity for systematists studying groups of living organisms and the book will be of most value to biologist/paleontologists who study groups of continental organisms with at least some living representatives. The authors are not palaeontologists and clearly feel that palaeontology has a limited role in biogeographical studies. I feel that it is a pity that they take such a narrow view. Cladistic biogeography can be applied to fossil groups but only if palaeontologists can be persuaded to understand the methodology and attempt to apply it. I fear that this book will not encourage them to do so.
A.R. MILNER, Birbeck College, London
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